# EXHIBIT F

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON DIVISION

IN RE: ETHICON, INC., PELVIC REPAIR SYSTEM PRODUCTS LIABILITY LITIGATION

Master File No. 2:12-MD-02327

MDL NO. 2327

JOSEPH R. GOODWIN
US DISTRICT JUDGE

THIS DOCUMENT RELATES TO THE FOLLOWING CASES IN WAVE 1 OF MDL 200:
Bonnie Blake, et al., v. Ethicon, Inc., et al.,
Civil Action No. 2:12-cv-00995
Robin Bridges v. Ethicon, Inc., et al.,
Civil Action No. 2:12-cv-00651
Carey Beth Cole, et al., v. Ethicon, Inc., et al.,
Civil Action No. 2:12-cv-00483
(Continued on next page)

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MARCH 2, 2016

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Deposition of JIMMY W. MAYS, PhD, held at Marco Island Marriott Beach Resort, South Collier Boulevard, Marco Island, Florida, commencing at 8:36 a.m., on the above date, before Joan L. Pitt, Registered Merit Reporter, Certified Realtime Reporter, and Florida Professional Reporter.

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materials.

**Q.** And you've never personally inspected a mesh explant of Prolene, have you?

**A.** No.

**Q.** Have you ever done any testing of a mesh explant of Prolene?

**A.** Not of Prolene.

**Q.** And, Doctor, are you -- do you know what medical products you're here and designated to testify about and give opinions about?

**A.** Yes, I do. They're listed at the beginning of my report.

**Q.** Where do you see that?

**A.** If you go over on page 4, under background, the various Prolene mesh products are listed there.

**Q.** Sir, do you know if all those products -- and just for the record, we're looking at Prolene Mesh, Gynemesh PS, Prolift, Prolift +M, Prosima, TVT-Secur -- I'm sorry -- Gynecare TVT System, TVT Retropubic, TVT-O, TVT-Abbrevo, TVT-Secur, and TVT-Exact; is that correct?

**A.** I'm sorry. Could you --

**Q.** Is that the list of the medical --

**A.** That is the list, yes.

**Q.** And, Doctor, do you know if all those products

additives are present at a very low level.

**Q.** But to be exact, polypropylene is chemically different than Prolene; correct?

**A.** Well, polypropylene as it's encountered in the marketplace essentially always has these additives in it. Processing aids and antioxidants are always put into polypropylene.

**Q.** Right, but, Doctor, my question is more specific. Is it your testimony that polypropylene and Prolene are chemically different or chemically the same?

**A.** Prolene is a particular formulation of polypropylene.

**Q.** So they're chemically different; correct?

**A.** There are additives added.

**Q.** But they are chemically different? Polypropylene is chemically different than Prolene; correct?

**A.** Well, Marlex versus Prolene, the base polymer in both is isotactic polypropylene. There may be different additives in there. There may be different molecular weights of polypropylene use. There may be different molecular weight distributions of the polypropylene that's used. So Prolene is a particular formulation of polypropylene.

Q. I understand that, Doctor, but Prolene has a different chemical composition compared to pure polypropylene; correct?

A. Compared to pure polypropylene, that's correct.

Q. Thank you. And Prolene and polypropylene are not identical from a chemical composition standpoint, are they?

A. Polypropylene is the major component in Prolene.

Q. Right, but they are not chemically identical, are they, sir?

A. The additives make them different. Prolene has the additives. Pure polypropylene would not.

Q. And you'd never teach your polymer students at UT that Prolene and polypropylene have the same chemical composition, would you?

A. No, I would teach them that Prolene is an isotactic polypropylene with a certain additive package in it.

Q. Let's talk about polypropylene specifically, if you will. You've studied polypropylene before, I take it, as a scientist?

A. Yes.

Q. When did you begin doing that?

Have you personally performed any testing to determine if Prolene degrades?

**A.** We have performed testing to determine whether or not polypropylene --

**Q.** And I'm not -- I don't mean to cut you off, but I am under a time limit. I'm talking about Prolene.

Have you personally done any testing to determine if Prolene degrades?

**A.** We have tested polypropylene pelvic mesh. That was a Boston Scientific product. But these materials are 99.8 percent polypropylene.

**Q.** And move to strike as nonresponsive.

Doctor, I'm asking you a specific question. I need a yes or no. Have you personally performed any testing to determine if Prolene degrades?

**A.** We have tested polypropylene, but we have not tested Prolene.

**Q.** Thank you. And, Doctor, you've not tested the mechanical properties of Prolene, have you?

**A.** We have not.

**Q.** Doctor, have you done any tests on Prolene that can be repeated and confirmed? I'm talking about Prolene, not polypropylene.

**A.** Yeah. We have not in my laboratory tested

Prolene.

**Q.** Doctor, have you ever done -- and when you say you have not in your laboratory tested Prolene, would that include a pristine piece of Prolene and also an explanted piece of Prolene?

**A.** Yeah, again, as I said earlier, we may have characterized some material that was sent to us by someone at some point, probably in terms of a molecular weight analysis or something like that, but I don't recall testing Prolene.

**Q.** Doctor, have you ever personally seen a Prolene explant that has degraded?

**A.** I've seen pictures, but I haven't actually with my own two eyes seen the degraded Prolene explant.

**Q.** And, Doctor, with your own two eyes, have you ever seen oxidated Prolene?

**A.** With my own two eyes, I'd have to say no.

**Q.** Doctor, with your own two eyes, have you ever personally seen Prolene with embrittlement?

**A.** No.

**Q.** Have you ever with your own two eyes personally seen Prolene that has a loss of mechanical properties?

**A.** What do you mean by "loss of mechanical properties"?

Q. A reduction in the physical properties.
A. Which ones?
Q. Any of them.
A. Have I actually seen that material with my own eyes?
Q. Yes, sir.
A. No.
Q. Thank you. And, in fact, Doctor, you've never tested the durability of Prolene, have you?
A. No.
Q. You've never tested the tensile strength of Prolene, have you?
A. No.
Q. You've never tested the toughness of Prolene, have you?
A. No.
Q. You've never tested any type of physical property of Prolene, have you?
A. No.
Q. You've never done any type of benchtop testing of Prolene, have you?
A. No.
Q. And you've never done any root cause analysis to determine if Prolene is defective, have you?

A. Yes, I think I have.

Q. What?

A. Basically, I reviewed extensive literature, both Ethicon internal literature where they observed degradation of explanted Prolene, and I also reviewed extensive literature. I could go through paper by paper, if you like, and they observed degradation of Prolene implants.

Q. And we're going to get to that, but outside of literature, Doctor, have you ever done any -- outside of your literature review, have you ever done any type of root cause analysis to determine if Prolene is defective?

A. We have explored the mechanism by which polypropylene mesh degrades inside the body.

Q. Okay. And I'm sorry if my question wasn't clear. I was asking about Prolene.

So outside of literature, Doctor, have you ever done any type of root cause analysis to determine if Prolene is defective?

A. What do you mean by "root cause analysis"?

Q. Any type of analytical study to determine if Prolene is defective.

A. You mean actually perform experiments on

Prolene? No.

**Q.** Doctor, have you ever performed any type of accelerated aging tests for Prolene?

**A.** No.

**Q.** Doctor, you've cleaned mesh before, have you not?

**A.** Yes.

**Q.** Have you personally been involved in that process?

**A.** Yes, I have.

**Q.** And was that with the 11 explants in Boston Scientific?

**A.** Yes.

**Q.** Have you ever personally cleaned Prolene mesh?

**A.** No.

**Q.** Have you ever been involved in any type of cleaning protocols for Prolene mesh?

**A.** With developing the cleaning protocol?

**Q.** For Prolene mesh. Not polypropylene. Prolene mesh.

**A.** No, we haven't cleaned Prolene mesh.

**Q.** And -- but you haven't been involved in any cleaning protocols for Prolene mesh; correct?

**A.** There's an ASTM protocol, and that's what we

use when we clean polypropylene.

**Q.** Right, but I'm asking about your personal experience, Doctor. You've never been involved in any cleaning protocols for Prolene mesh; correct?

**A.** No. Correct.

**Q.** Doctor, look back at Exhibit 1 for me, please. That's a notice of deposition?

**A.** Yes.

**Q.** I'll represent to you that you're designated in 28 different lawsuits. Does that look about right?

**A.** That looks about right.

**Q.** Do you know what -- and each lawsuit represents the name of a plaintiff that received a Prolene implant; correct?

**A.** Correct.

**Q.** Do you know what product these 28 women received?

**A.** All I know is it was Prolene, a Prolene-based mesh.

**Q.** You never reviewed medical records?

**A.** No.

**Q.** Never talked to any of the doctors?

**A.** No.

**Q.** Never inspected any of the explants from these

Q. But my question is: Do you know the specific reason why any of these 28 plaintiffs' mesh was removed?

A. No, I don't.

Q. You don't know when these 28 plaintiffs' meshes were implanted, do you?

A. I do not have those records, no.

Q. And you don't know when they were explanted?

A. No.

Q. Do you know how many pieces of an explant was removed?

A. No.

Q. And do you know if these 28 plaintiffs' explants were stored in formalin?

A. No.

Q. You would agree that if explants exist for these 28 plaintiffs, that would be an important piece of evidence in this litigation; correct?

A. That would be, yes.

Q. And would you like to review those explants?

A. Sure.

Q. And have you asked the plaintiffs' lawyers for the permission to review those explants?

A. I have not.

Q. Why not?

A. Well, I might very well at some point in time. The first step was to get familiar with the case and file my report.

Q. Doctor, have you ever seen any type of histology slides from any of these 28 plaintiffs?

A. Not to my knowledge.

Q. Would you review histology slides if they were available?

A. I'd certainly look at them.

Q. Have you asked for them?

A. I have not.

Q. Doctor, have you ever performed -- strike that.

Fair to say that you've never performed any type of analytical testing on the explants of these 28 plaintiffs; correct?

A. Correct.

Q. You've never done any type of SEM, FTIR, DSC, EDS, GPC on these plaintiffs' explants; correct?

A. Correct.

Q. Doctor, have you -- strike that.

I think we talked about this earlier, but it's undisputed that degradation affects the physical properties of mesh; correct?

A. Yes.

A. My experience with polypropylene, my characterization of polypropylene-based meshes.

Q. Do you base --

A. The literature that Ethicon has in-house going back to the early '80s where they again and again see evidence of oxidative degradation of polypropylene implants.

Q. Doctor, you've never personally run any type of oxidation tests on Prolene; correct?

A. To my knowledge, not on Prolene.

Q. And you've never done a molecular weight test?

A. We've done a lot of molecular weight tests.

Q. On Prolene?

A. As I said earlier, we may have in the polymer characterization lab at some time, but I don't recall explicitly doing molecular weight determinations on Prolene.

Q. Okay. And you would have done that by GPC; correct?

A. Yes. It's not the only way to determine molecular weight, but it's a very common way to do it.

Q. And, Doctor, those analytical testing techniques were available to you at your lab at UT; correct?

Q. But you don't know for sure, do you, sir?

A. Not in the case of Clave.

Q. Okay. Thank you.

A. I haven't seen firm evidence. But then I've also got the internal Ethicon documents.

Q. We're going to get to those in a minute, but I'm talking about the peer-reviewed literature. Okay?

A. Okay.

Q. So we'll get to those in a minute, but let's stick with the peer-reviewed literature.

A. Okay.

Q. Jongebloed, Mary, and Costello are the only literature regarding Prolene that you base your opinions on; is that correct?

A. Yes.

Q. Okay. And, Doctor, I forgot to ask you about this earlier, but when we were talking about physical and mechanical property testing, you'll agree that mechanical properties and the evaluation of mechanical properties is relevant when determining whether or not mesh degrades?

A. I don't think it's necessarily relevant. One can determine if a material is degrading by spectroscopic means, chemical changes in the material,

or one could look at molecular weight changes in the material. If chains are being broken, degradation is happening.

Those changes manifest themselves in changes in mechanical properties, but they're not the direct observation of the degradation process. You're measuring the consequences of degradation with those studies.

**Q.** Doctor, but, nevertheless, evaluating mechanical properties and physical properties are an important part in your analysis of whether or not a material degrades; correct?

**A.** No. As I just said, degradation can be established with spectroscopy, with microscopy, with gel permeation chromatography, with light scattering, and other molecular methods.

**Q.** Can degradation be established by reduction in physical properties?

**A.** If one measures a material and sees a reduction in mechanical properties, again, just speaking generically about mechanical properties at this point, if one sees a change, then one might suspect degradation is taking place, yes.

**Q.** All right. And just so the record's clear,

degradation can be established by reduction in physical properties; correct?

**A.** No, molecular level degradation needs spectroscopy or molecular weight measurements. Mechanical properties -- changes in mechanical properties are merely an outcome of the chemical changes. They're not direct.

**Q.** Doctor, would you ever tell your students at UT to disregard the results of physical properties when making a determination of whether or not a polymer has degraded?

**A.** Well, if they had that material at hand, certainly they would factor it into the analysis, but it's not the direct analysis of whether or not a material has degraded.

**Q.** I understand that, sir, but you will agree that it is one piece of the puzzle on whether or not a polymer has degraded; correct?

**A.** It's a piece of the puzzle, but it's a secondary piece of the puzzle. It's not a primary one.

**Q.** Doctor, do you have any evidence that any of these 28 plaintiffs experienced any type of chronic pain related to Prolene?

**A.** No direct evidence, but they had their mesh

taken out, and I assume they had problems with it, or they wouldn't be suing Ethicon.

**Q.** That's an assumption on your part; correct?

**A.** It is. It is.

**Q.** And, Doctor, can you identify by name a single person who has had a failure of their mesh for the reasons that you outline in your report?

**A.** I would say that oxidative degradation is at the heart of the problems that all of these people had with the mesh and it's the reason that there's multiple mesh companies with thousands of lawsuits around. People are having problems with polypropylene mesh. It's fundamentally the wrong material to make a pelvic mesh out of.

**Q.** Doctor, can you identify by name a single person who has had a failure of their mesh for the reasons outlined in your report?

**A.** Again, all these people --

**Q.** I'm just asking for a name.

**A.** All of these people, Bonnie Blake, Robin Bridges, Carey Beth Cole, these people had problems with their mesh.

**Q.** How did Bonnie Blake's mesh fail?

**A.** Oxidative degradation is at the core of what's

of these removals, so every individual listed here.

**Q.** Okay. And, Doctor, how do you know that Bonnie Blake's mesh was removed because of degradation without reviewing the medical records?

**A.** It's made out of polypropylene. Polypropylene is attacked inside the human body with strong oxidizing agents.

**Q.** Does Bonnie Blake have any mesh that's made out of Prolene?

**A.** I have to assume that her mesh was made out of Prolene because she's suing Ethicon.

**Q.** Do you know if Bonnie Blake has mesh that's made out of Prolene?

**A.** I think it's a logical conclusion to reach.

**Q.** My question is: Do you know, sir, whether or not Bonnie Blake has mesh that's made out of Prolene?

**A.** I have not reviewed her medical records. Okay?

**Q.** But my question is: Do you know if Bonnie Blake has mesh that's made out of Prolene? Yes or no?

**A.** Yes.

**Q.** And what do you base that on?

**A.** The fact that she's suing Ethicon.

**Q.** Doctor, you're not a clinician?

**A.** I'm not.

Q. And you haven't -- have you ever reviewed a medical record that says the surgeon is removing Prolene mesh as a result of degradation?

A. I don't review medical records normally. I'm a polymer scientist. I'm a polymer chemist. The chemistry of polymers, the characterization of polymers, is my thing. I'm not a medical doctor.

Q. I understand that, Doctor, but my question is: Have you ever reviewed a medical record that says a surgeon is removing Prolene mesh as a result of degradation?

A. I have not.

Q. Doctor, have you done anything whatsoever to explain how the alleged effects of degradation have caused clinical harm to any of these 28 plaintiffs?

A. Well, my report describes what happens to the properties of polypropylene when they undergo degradation, and it's the mechanical mismatch between the degraded implants and the soft tissue that surrounds it that's the root cause of these problems.

Q. Do you know the symptoms that any of these 28 plaintiffs were complaining about?

A. Individual symptoms will vary, but pain is a very common one.

additives, such as processing aids and antioxidants, yes.

**Q.** Doctor, I know that you've worked for -- against, rather -- Boston Scientific. Have you ever done any type of analytical testing of pelvic mesh explants other than in Boston Scientific?

**A.** No.

**Q.** And, Doctor, are you -- did you perform any type of physical property testing of the pelvic explants in the Boston Scientific litigation?

**A.** We measured the materials by spectroscopy, we did GPC, we looked at the materials with thermogravimetric analysis, SEM with EDS, but we did not measure mechanical properties of those materials.

**Q.** Why not?

**A.** We were interested in determining what caused the degradation of those materials once we noted the degradation, and we used spectroscopy and GPC to do it. As I mentioned earlier, those are the primary tools that one would use to get direct evidence of degradation and to identify what's causing the degradation.

**Q.** Doctor, you'll agree that the adherence to protocols and controls is the hallmark of good science?

**A.** Yes.

to have to spell, probably, a few of those.

THE WITNESS: We'll do that.

MR. HUTCHINSON: Yeah.

THE WITNESS: We'll do that.

BY MR. HUTCHINSON:

**Q.** But -- I'm sorry. You're not an expert in the design of surgical mesh?

**A.** Actually designing the mesh, the geometry, the shape, no, I'm not.

**Q.** And, Doctor, you testified in Boston Scientific that polypropylene meshes should not be available to doctors to treat SUI or POP. Do you recall that?

**A.** Yes.

**Q.** And do you stand by that?

**A.** Yes, I do.

**Q.** Doctor, you testified that polypropylene vaginal mesh is a very bad idea. Do you stand by that?

**A.** I do.

**Q.** And you've never shared those views with any physicians at UT; is that right?

**A.** Yes, I have.

**Q.** When did you do that?

**A.** I did that late summer/early fall of last year.

**Q.** And you did that after you were cross-examined

about that; correct?

**A.** Yeah, I did.

**Q.** Doctor, have you ever told the doctors at UT that Prolene mesh should not be used to treat SUI or POP?

**A.** I cautioned them about polypropylene mesh broadly.

**Q.** Okay. But my question is specifically about Prolene. Have you ever told the doctors at UT that Prolene mesh should not be used to treat SUI or POP?

**A.** When I told them that polypropylene mesh should not be used, that it's a bad idea, that it's susceptible to degradation inside the human body, they should know that Prolene is polypropylene-based pelvic mesh, just like Marlex is.

**Q.** But, Doctor, have you ever told doctors at UT that using Prolene mesh should not be done in treating SUI or POP?

**A.** Not yet.

**Q.** Doctor, you testified in the Boston Scientific litigation that you couldn't cite any literature that states there's a clinical effect of degradation on a patient. Do you remember that?

**A.** Yes, I do.

Q. And, Doctor, to this day, are you still unaware of any literature that states there's a clinical effect of degradation on the patient?

A. No. I've gone and reviewed literature.

Q. And, Doctor, are you aware of any literature that states there's a clinical effect of degradation on the patient?

A. Yes.

Q. And what literature is that?

A. The book by Williams is the key reference.

Q. What's the name of the book?

A. Let me find it. It's in my reference list here.

Yeah, it's Reference 44, Essential Biomaterials Science.

Q. And that's the key reference that you rely on?

A. Yes.

Q. Doctor, does the Williams book say anything at all about the clinical effect of degradation of Prolene?

A. I don't recall it calling out Prolene by name, but it basically lays out that implants have to be mechanically compatible with the tissue that they're implanted in, and initially a polypropylene mesh, including the Ethicon meshes, are supple and they move

with this soft vaginal tissue, but as the oxidative process takes place, the mesh stiffens, and then it can no longer move with that material.

So you've got soft flesh moving and the mesh isn't moving, so there's an abrasion, and this is a sort of thing that can lead to the abrasions that are seen with this mesh.

**Q.** Doctor, stick with me. Are you aware of any literature that states there's a clinical effect of Prolene degradation on a patient? That's my question.

**A.** I may have -- I may very well have seen that in all of my literature review, but I can't call it out as I sit here right at this moment.

**Q.** And you didn't cite any reference in your report that says there's a clinical effect of Prolene degradation on a patient; correct?

**A.** Actually, on thinking about it, I think this Klinge article, Reference 42, calls this out.

**Q.** And what does it say about the clinical effect of Prolene degradation on a patient?

MR. MONSOUR: I'm going to object to form. Can I ask you one question just for clarity's sake? Are you talking about polypropylene articles, or are you talking --

actually increasing the molecular weight because you're incorporating oxygen into it.

**Q.** Doctor, there must be a loss of molecular weight for degradation to occur; correct?

**A.** Must be a loss of? Well, with polymers, if you're talking about oxidative degradation of polypropylene, you will see a reduction in molecular weight.

**Q.** Thank you. And there must be -- there must be a reduction in molecular weight for degradation for a polymer; correct? You can't have one without the other?

**A.** Degradation? Yes, you can. You can have chemical changes. Remember, I defined degradation as chemical changes in the polymer. You could have oxidation occurring at some level not to the point where it actually starts to cleave the chain and you will see increase in the molecular weight of the material.

**Q.** But, Doctor, for oxidative degradation to occur, there must be loss of molecular weight; correct?

**A.** Yes, when oxidative degradation of polypropylene occurs, there is degradation of molecular weight.

**Q.** And when oxidative degradation of Prolene occurs, there must be loss of molecular weight; correct?

A. There will be reduction in molecular weight. And I want to be specific about molecular weight. Molecular weight is a term that gets tossed around loosely a lot with polymers, but there are different types of average molecular weights.

Q. Right.

A. Number average, weight average.

Q. I'm going to get to those in just a minute. But if oxidation occurs, you must have cleavage of the polymer chain?

A. Oxidative degradation of polypropylene does lead to chain cleavage, that's correct.

Q. And oxidative degradation of Prolene leads to strong carbonyl bands present on FTIR that weren't there before; correct?

A. Correct.

Q. And strong -- I'm sorry.

Oxidative degradation of Prolene leads to reduced physical properties; correct?

A. It changes physical properties. It depends on the particular one whether it's reduced or not.

Q. And when the polymer chain is cleaved, there's a reduction in physical properties; correct?

A. Well, you have to specify which one.

Prolene.

**Q.** Right. But, Doctor, I'm asking you for solid scientific data. Other than Costello, are you aware of any solid scientific data that shows Prolene has diminished physical properties?

**A.** There's also data in Ethicon's own studies where in one instance material retained only 54 percent of its initial strength after oxidative degradation.

**Q.** Doctor, you're talking about the 1983 document from Ethicon?

**A.** I'd have to look at it. There's a couple of 1983 documents, but that sounds about right.

**Q.** But when we're talking about the suture retained only 54 percent of its original strength, you'll agree that in that study only one explanted fiber was tested?

**A.** I'd have to look at that study to say.

**Q.** Okay. Do you have that study with you?

**A.** I believe I do.

What was the number on that one? I'd have to go back to my report and track it down that way.

**Q.** ETH.MESH.15955438?

**A.** Okay.

**Q.** Are you there with me, Doctor?

A. I am in that document, yes.

Q. And, Doctor, you'll agree that only one explanted fiber was tested, would you not?

A. It was 5-0 Prolene from Specimen 2.

Q. But one explanted fiber was tested; correct?

A. They performed tests on one explanted fiber, but there's no indication of how many times that might have been tested.

Q. And, Doctor, as a scientist, would you ever rely on one data point in drawing conclusions for a paper that you'd present to the American Chemical Society?

A. Well, my point is, they may have actually tested that sample multiple times.

Q. But my question to you, Doctor, and listen closely to my question: Would you ever rely, as a scientist, on one data point in drawing a conclusion for a paper that you'd present to the American Chemical Society?

A. I would rely on one data point, but I would want more data, and what they show in this paper is there's evidence of other fibers cracking.

Q. And, Doctor, did you rule out that the fiber had been damaged by a scalpel? Did you rule that out?

A. You would think that they would not test material that had been damaged by a scalpel.

Q. How did you rule that out?

A. I don't have the fiber to examine.

Q. And you didn't rule that out that the fiber had been damaged by a scalpel, had you?

A. Well, I trust that Ethicon hires good scientists who would be careful.

Q. Did you rule out the fact that Ethicon's fiber was damaged by a scalpel?

A. I have no evidence that it was.

Q. If you look at -- going back to your report, on page 5, where we discussed chain scission, chain scission produces carbonyl bands; correct?

A. Chain scission in polypropylene accompanies the formation of carbonyl bands. It's not that chain scission produces it, but --

Q. And chain scission in Prolene accompanies the formulation of carbonyl bands; correct?

A. Yes.

Q. In fact, Doctor, a carbonyl band from oxidation is one of the most intensely absorbing functional groups on FTIR; correct?

A. Yes, it's one that's easy to see.

A. For oxidized Prolene, I think that's the one.

Q. Costello is the one you're relying on?

A. Yeah. There's actually two Costello papers, yeah.

Q. Doctor, have you ever seen carbonyl bands from Prolene after it was implanted in vivo?

A. Well, as we just said, I've seen evidence gathered by Ethicon scientists and also from Costello.

Q. But outside of the documents that you've reviewed, the internal documents and peer-reviewed literature, Doctor, have you ever seen an FTIR spectra that has a carbonyl band at or around 1750 for oxidized Prolene?

A. You mean with my -- something we generated in the lab?

Q. Yes, sir.

A. No.

Q. With your own eyes.

A. No, we have not.

Q. And, Doctor, have you ever done an FTIR spectra for Prolene?

A. For polypropylene, yes. For Prolene, no.

Q. Doctor, you had the equipment at your lab at UT to do an FTIR spectra on Prolene, didn't you?

A. Yes.

Q. In fact, that was something easy for you to do; correct?

A. It is easy, yes.

Q. In fact, that's something you could have done; correct?

A. Yes.

Q. Are you an expert in FTIR?

A. I would say I'm quite experienced with it. We use it routinely to characterize polymers that we've made.

Q. But do you hold yourself as an expert in FTIR?

A. Well, I'm not a person who's specialized in spectroscopy my whole career, but we use it as a tool routinely.

Q. Doctor, do you tell the students you teach at UT that you're an expert in FTIR analysis?

A. I wouldn't classify myself as an expert. There's certainly people that practice it day in and day out that know more about it than I do.

Q. And, Doctor, do you know -- well, by the way, FTIR is a way to confirm oxidation?

A. Yes.

Q. And do you know where on an FTIR spectra a

Q. Okay. Let's look at -- continuing on page 15, at the bottom, you cite the Mary article?

A. Yes.

Q. And we've talked about Mary already; is that right?

A. Yes.

Q. And, Doctor, you'll agree that the authors in Mary did not recognize 1740 as a wavelength for DLTDP?

A. I don't know that, but I have no evidence that they explicitly pointed that out.

Q. Well, did the study -- did the Mary study, sir, recognize a 1740 wavelength for DLTDP?

A. I did not see that called out in there.

Q. And, in fact, sir, if -- how would you know that -- first of all, Prolene has DLTDP in it, doesn't it?

A. Yes, it does.

Q. And if the Mary article did not have a wavelength at 1740 reciprocal centimeters for DLTDP, how in the world do you know it's Prolene that they were looking at?

A. I'm not sure I follow you.

Q. Okay. Well, the FTIR analysis in Mary did not show a peak at 1740 reciprocal centimeters?

**A.** Can we look in there?

**Q.** Absolutely.

**A.** They did carry out a cleaning study.

**Q.** My question is, sir: The FTIR analysis in Mary did not show a peak at 1740 reciprocal centimeters for the DLTDP wavelength; correct?

**A.** They measured the absorbance at 1740.

**Q.** Yes, sir, but did they recognize that wavelength for DLTDP, is my question?

**A.** They did not, but they had cleaned the sample, and that would remove surface antioxidants. Plus, the sutures had been in the body for two years, which would also deplete antioxidants present at the surface.

**Q.** The authors in Mary didn't compare the elongation of Prolene to PVDF, did they?

**A.** Compare the elongation of the Prolene and the PVDF?

**Q.** That's correct.

**A.** PVDF? I don't see the comparison.

**Q.** Doctor, on page 20 of your expert report, there's an SEM photograph?

**A.** Yes.

**Q.** That's not a -- that's not a Prolene product, is it? Top of page 20.

compared to Dog Site 3 and Dog Site 2. Do you see that? Down at the bottom.

**A.** Yes.

**Q.** And what do you notice about the change of molecular weight, Doctor?

**A.** I notice that those are not changing very much.

**Q.** And that was done by GPC; correct?

**A.** Yeah, I would assume so. That's how these values are normally derived.

**Q.** And, in fact, at the bottom, under conclusions, it says: "Comparison of 7-year explants to current Prolene indicate no molecular weight degradation."

Did I read that correctly?

**A.** That's what it says.

**Q.** Any reason to dispute that, Doctor?

**A.** Well, I would need to have more details about what they did, because they're also carrying out intrinsic viscosity measurements here, these IV measurements, and it's not clear to me whether they're deriving these MW values from that IV measurement. That's commonly done.

And maybe they're getting these number average molecular weights from GPC. I simply don't know. They don't clearly tell me where these values are coming

decision.

**Q.** Do you have any reason to believe that these sutures were plasticized?

**A.** It is possible that polypropylene does undergo some plasticization inside the body.

**Q.** And, Doctor, plasticization would improve toughness, wouldn't it?

**A.** Plasticization would soften the material.

**Q.** But it would improve toughness? I'm asking about toughness. I'm not asking about softening the material. Toughness.

**A.** Plasticization at a reasonable level would probably improve the toughness of the material.

**Q.** Okay. And, Doctor, if toughness of the material improves, then we can rule out degradation, can't we?

**A.** That's not strictly true.

**Q.** But, Doctor, as a general rule, you will agree that as toughness improves, degradation can be ruled out; correct?

**A.** I would not make a general statement about that. I'd have to consider the specific material.

**Q.** Doctor, would that be consistent with the principles of polymerization that you used to teach your

C E R T I F I C A T E

I, JOAN L. PITT, Registered Merit Reporter, Certified Realtime Reporter, and Florida Professional Reporter, do hereby certify that, pursuant to notice, the deposition of JIMMY W. MAYS, PhD, was duly taken on March 2, 2016, at 8:36, before me.

The said JIMMY W. MAYS, PhD, was duly sworn by me according to law to tell the truth, the whole truth, and nothing but the truth, and thereupon did testify as set forth in the above transcript of testimony. The testimony was taken down stenographically by me. I do further certify that the above deposition is full, complete, and a true record of all the testimony given by the said witness.

_____

JOAN L. PITT, RMR, CRR, FPR

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